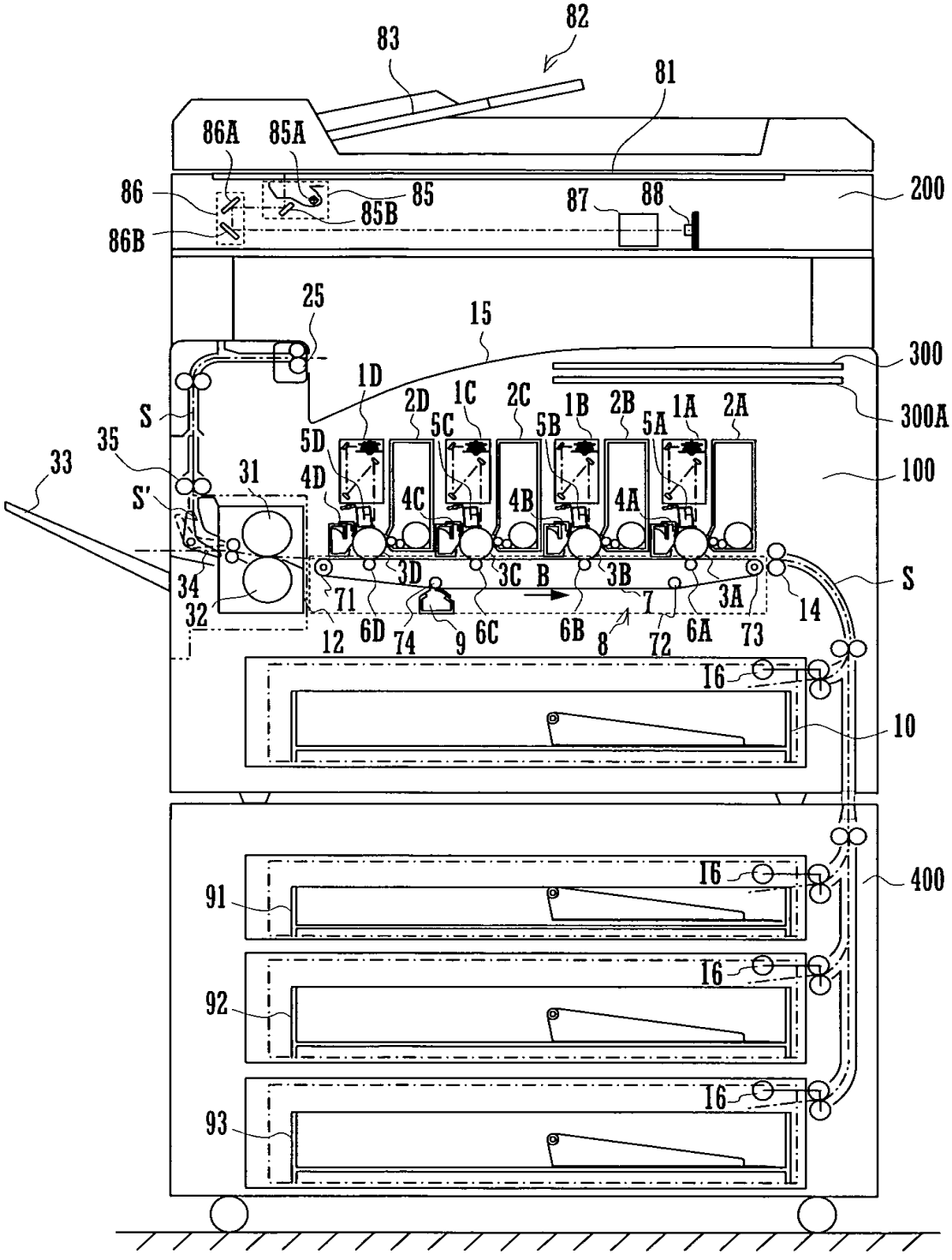

82
83
81
86A
85A
86
85
85B
87
88
200
86B
25
15
300
1D
2D
1C
2C
1B
2B
1A
2A
300A
S
5D
5C
5B
5A
35
33
31
4D
4C
4B
4A
100
S'
34
32
3D
3C
B
3B
3A
S
14
71
6D
74
9
6C
6B
8
72
6A
73
12
I6
10
91
I6
400
92
I6
93
I6

FIG. 1

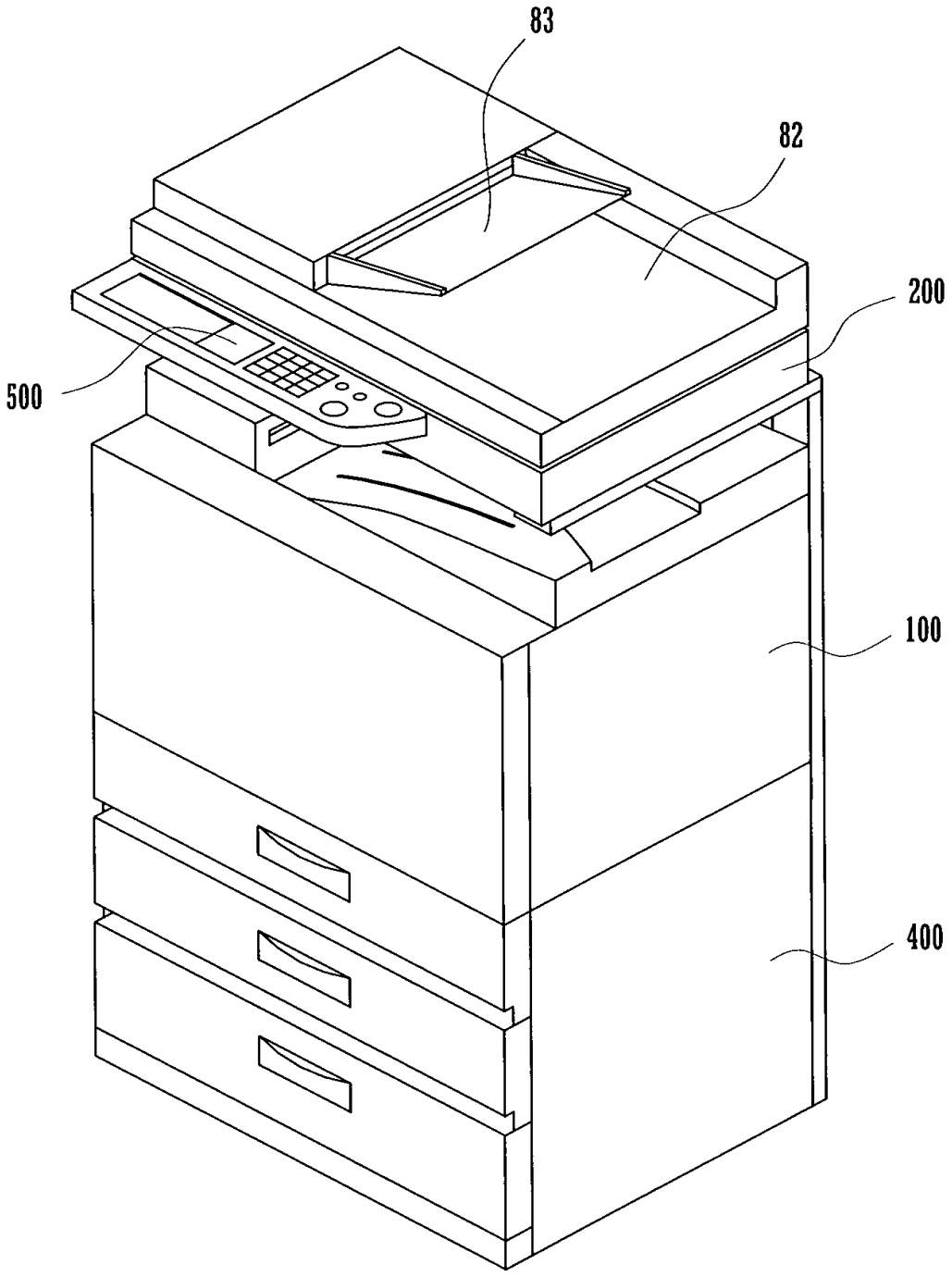



FIG. 2

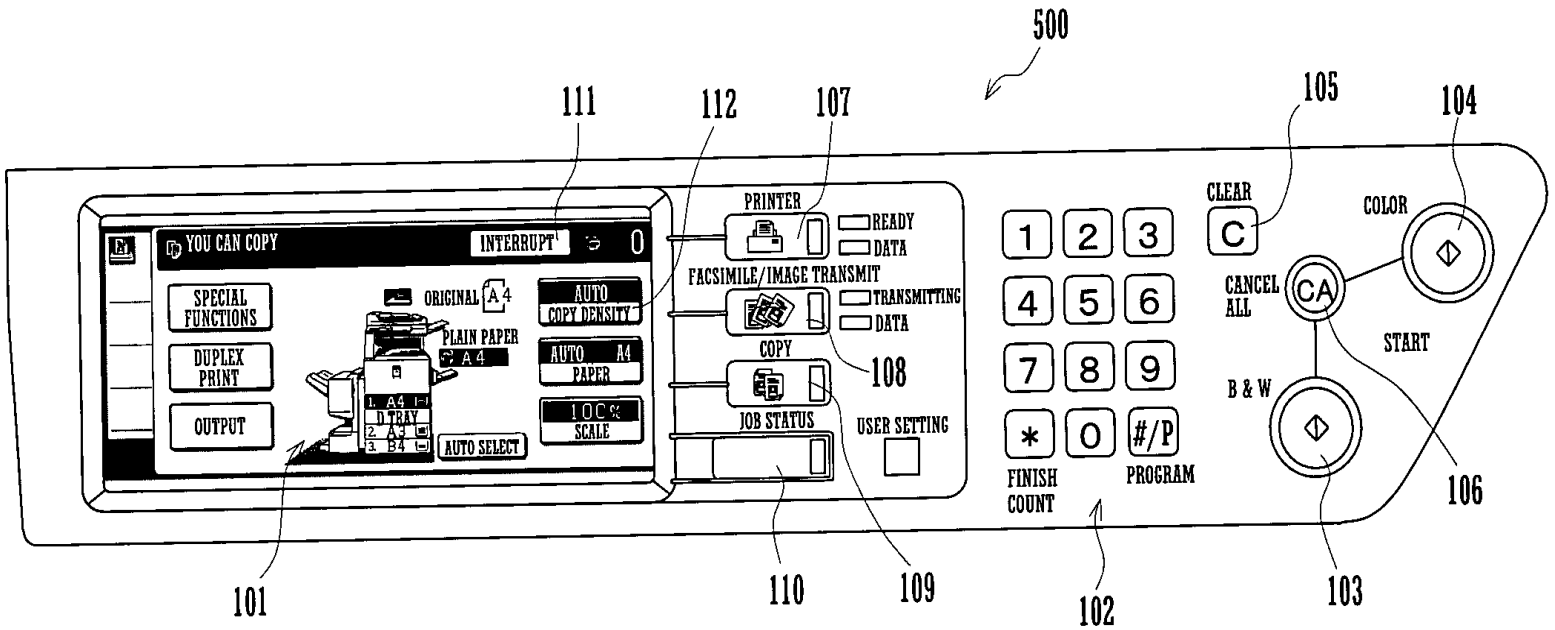

500
111
112
107
105
104
YOU CAN COPY
INTERRUPT
0
SPECIAL FUNCTIONS
DUPLEX PRINT
OUTPUT
ORIGINAL A4
PLAIN PAPER A4
AUTO COPY DENSITY
AUTO A4 PAPER
100% SCALE
AUTO SELECT
PRINTER
READY
DATA
FACSIMILE/IMAGE TRANSMIT
TRANSMITTING
DATA
COPY
108
JOB STATUS
USER SETTING
1 2 3
4 5 6
7 8 9
* 0 #/P
FINISH COUNT
PROGRAM
CLEAR
C
COLOR
CANCEL ALL
CA
START
B & W
106
101
110
109
102
103

FIG. 3

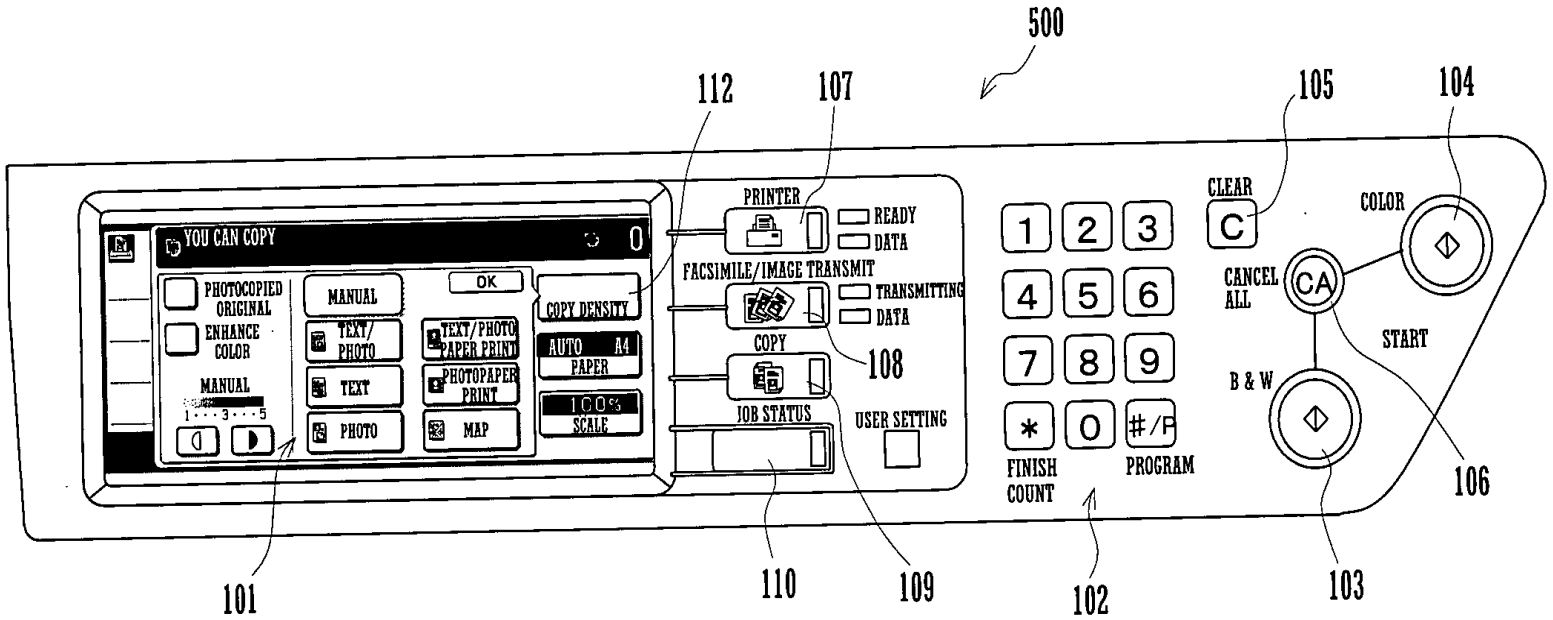

500
112
107
105
104
YOU CAN COPY
0
PHOTOCOPIED ORIGINAL
ENHANCE COLOR
MANUAL
1 3 5
MANUAL
OK
TEXT/ PHOTO
TEXT
PHOTO
TEXT/PHOTO PAPER PRINT
PHOTOPAPER PRINT
MAP
COPY DENSITY
AUTO A4 PAPER
100% SCALE
PRINTER
READY
DATA
FACSIMILE/IMAGE TRANSMIT
TRANSMITTING
DATA
COPY
108
JOB STATUS
USER SETTING
1 2 3
4 5 6
7 8 9
* 0 #/P
FINISH COUNT
PROGRAM
CLEAR
C
CANCEL ALL
CA
COLOR
START
B & W
106
101
110
109
102
103

FIG. 4

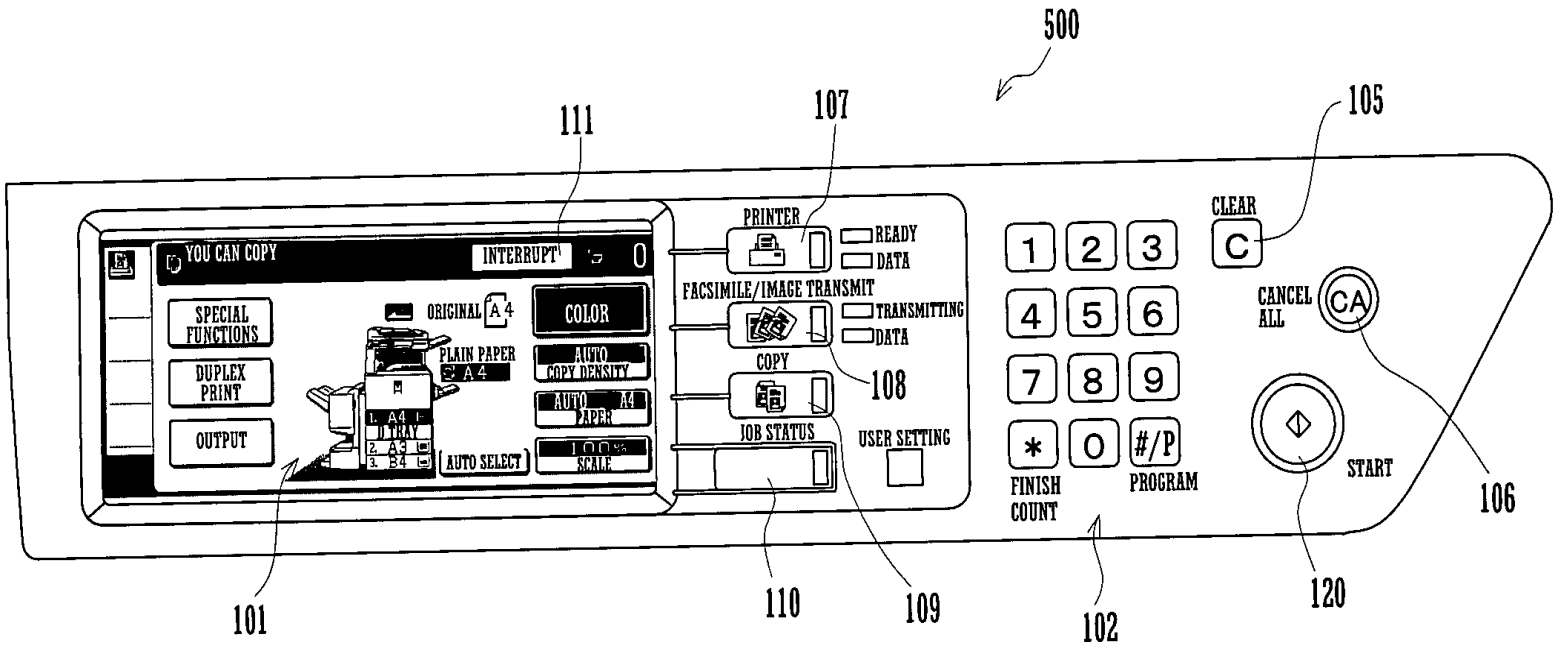

500
111
107
105
YOU CAN COPY
INTERRUPT
SPECIAL FUNCTIONS
DUPLEX PRINT
OUTPUT
ORIGINAL A4
PLAIN PAPER A4
1. A4
2. A3
3. B4
AUTO SELECT
COLOR
AUTO COPY DENSITY
AUTO PAPER A4
100% SCALE
PRINTER
READY
DATA
FACSIMILE/IMAGE TRANSMIT
TRANSMITTING
DATA
COPY
108
JOB STATUS
USER SETTING
1 2 3
4 5 6
7 8 9
* 0 #/P
FINISH COUNT
PROGRAM
CLEAR
C
CANCEL ALL
CA
START
106
101
110
109
102
120

FIG. 5

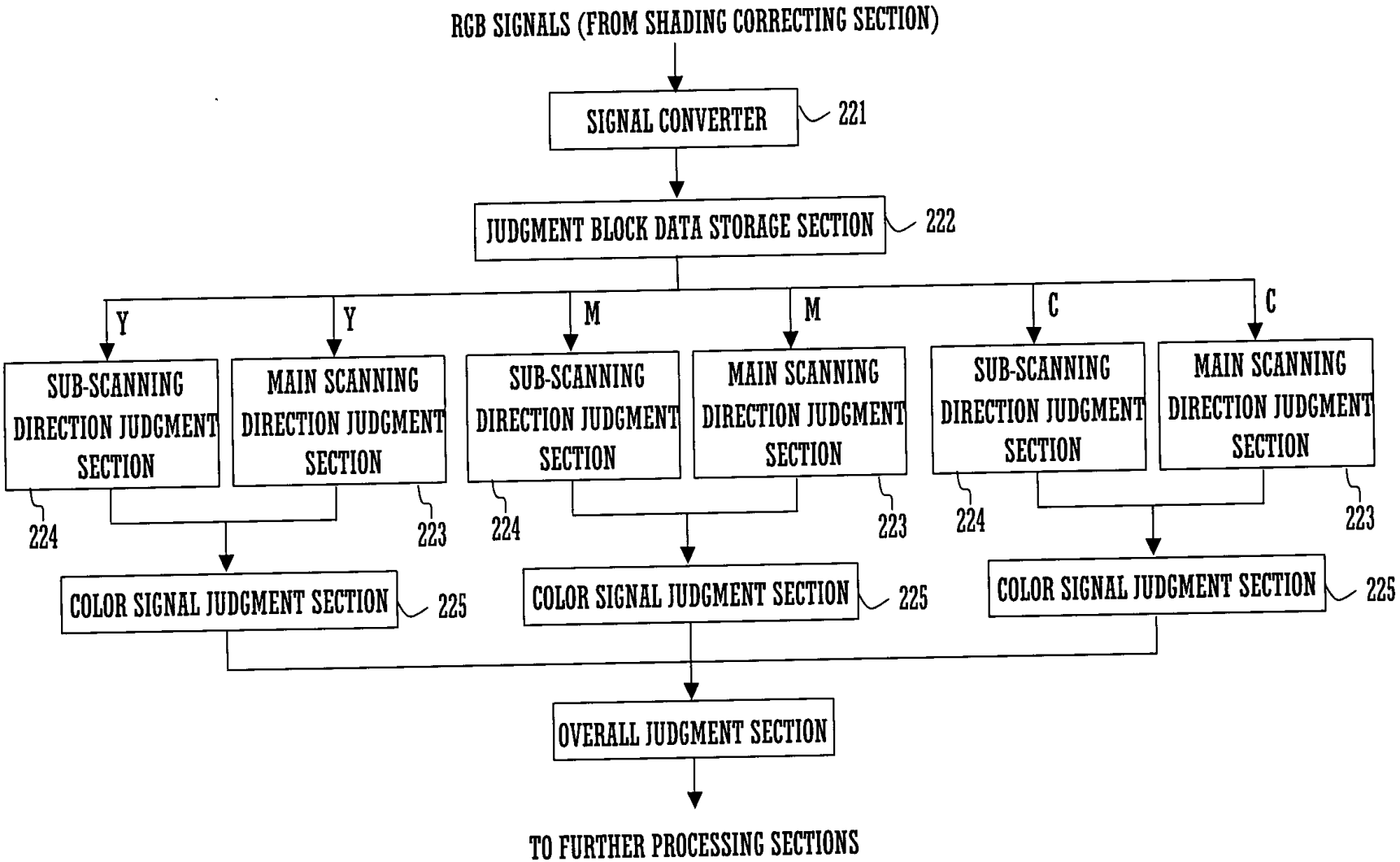

RGB SIGNALS (FROM SHADING CORRECTING SECTION)
SIGNAL CONVERTER
221
JUDGMENT BLOCK DATA STORAGE SECTION
222
Y
Y
M
M
C
C
SUB-SCANNING DIRECTION JUDGMENT SECTION
MAIN SCANNING DIRECTION JUDGMENT SECTION
SUB-SCANNING DIRECTION JUDGMENT SECTION
MAIN SCANNING DIRECTION JUDGMENT SECTION
SUB-SCANNING DIRECTION JUDGMENT SECTION
MAIN SCANNING DIRECTION JUDGMENT SECTION
224
223
224
223
224
223
COLOR SIGNAL JUDGMENT SECTION
225
COLOR SIGNAL JUDGMENT SECTION
225
COLOR SIGNAL JUDGMENT SECTION
225
OVERALL JUDGMENT SECTION
TO FURTHER PROCESSING SECTIONS

FIG. 6

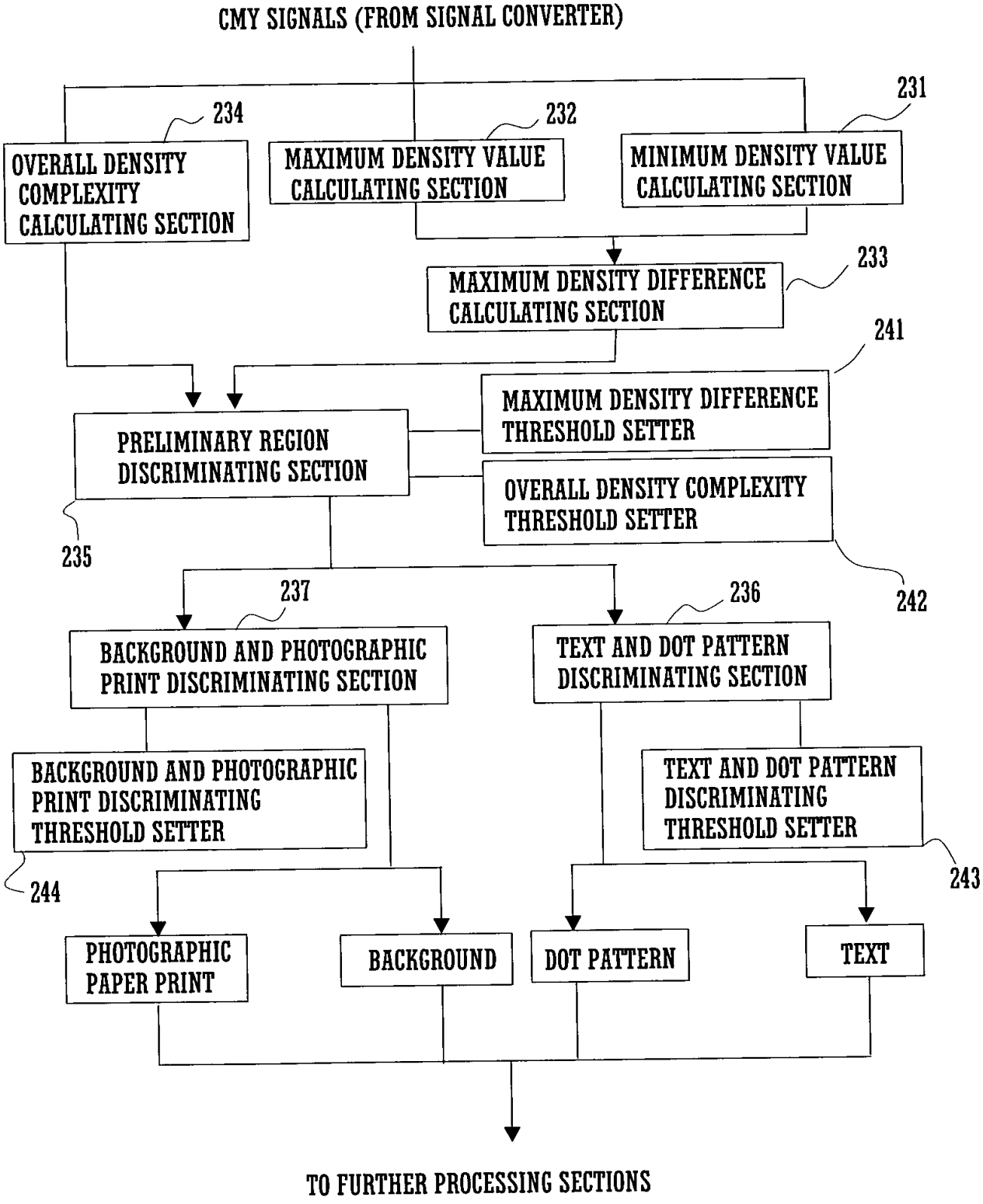

CMY SIGNALS (FROM SIGNAL CONVERTER)
234
232
231
OVERALL DENSITY COMPLEXITY CALCULATING SECTION
MAXIMUM DENSITY VALUE CALCULATING SECTION
MINIMUM DENSITY VALUE CALCULATING SECTION
233
MAXIMUM DENSITY DIFFERENCE CALCULATING SECTION
241
MAXIMUM DENSITY DIFFERENCE THRESHOLD SETTER
PRELIMINARY REGION DISCRIMINATING SECTION
OVERALL DENSITY COMPLEXITY THRESHOLD SETTER
235
242
237
236
BACKGROUND AND PHOTOGRAPHIC PRINT DISCRIMINATING SECTION
TEXT AND DOT PATTERN DISCRIMINATING SECTION
BACKGROUND AND PHOTOGRAPHIC PRINT DISCRIMINATING THRESHOLD SETTER
TEXT AND DOT PATTERN DISCRIMINATING THRESHOLD SETTER
244
243
PHOTOGRAPHIC PAPER PRINT
BACKGROUND
DOT PATTERN
TEXT
TO FURTHER PROCESSING SECTIONS

FIG. 7

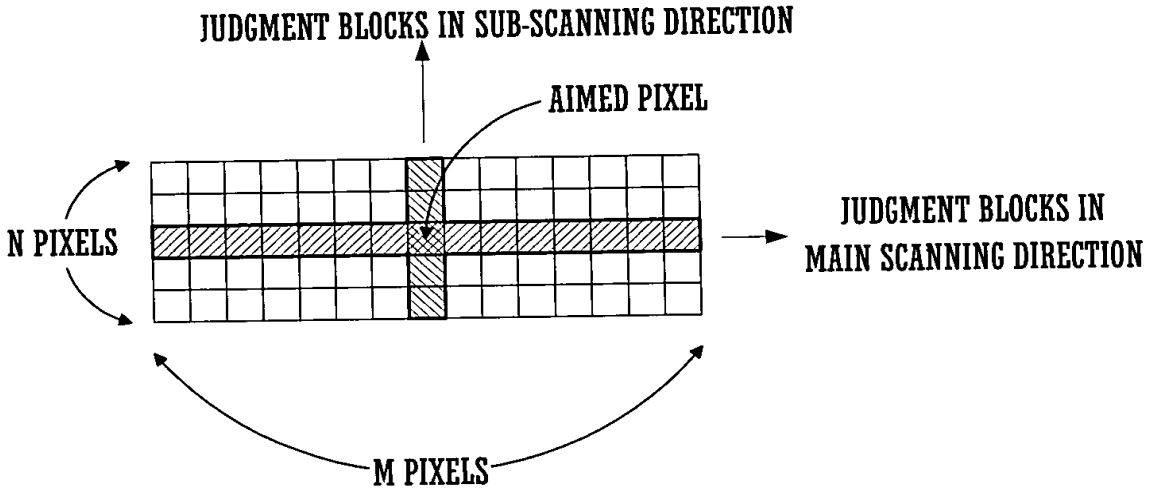
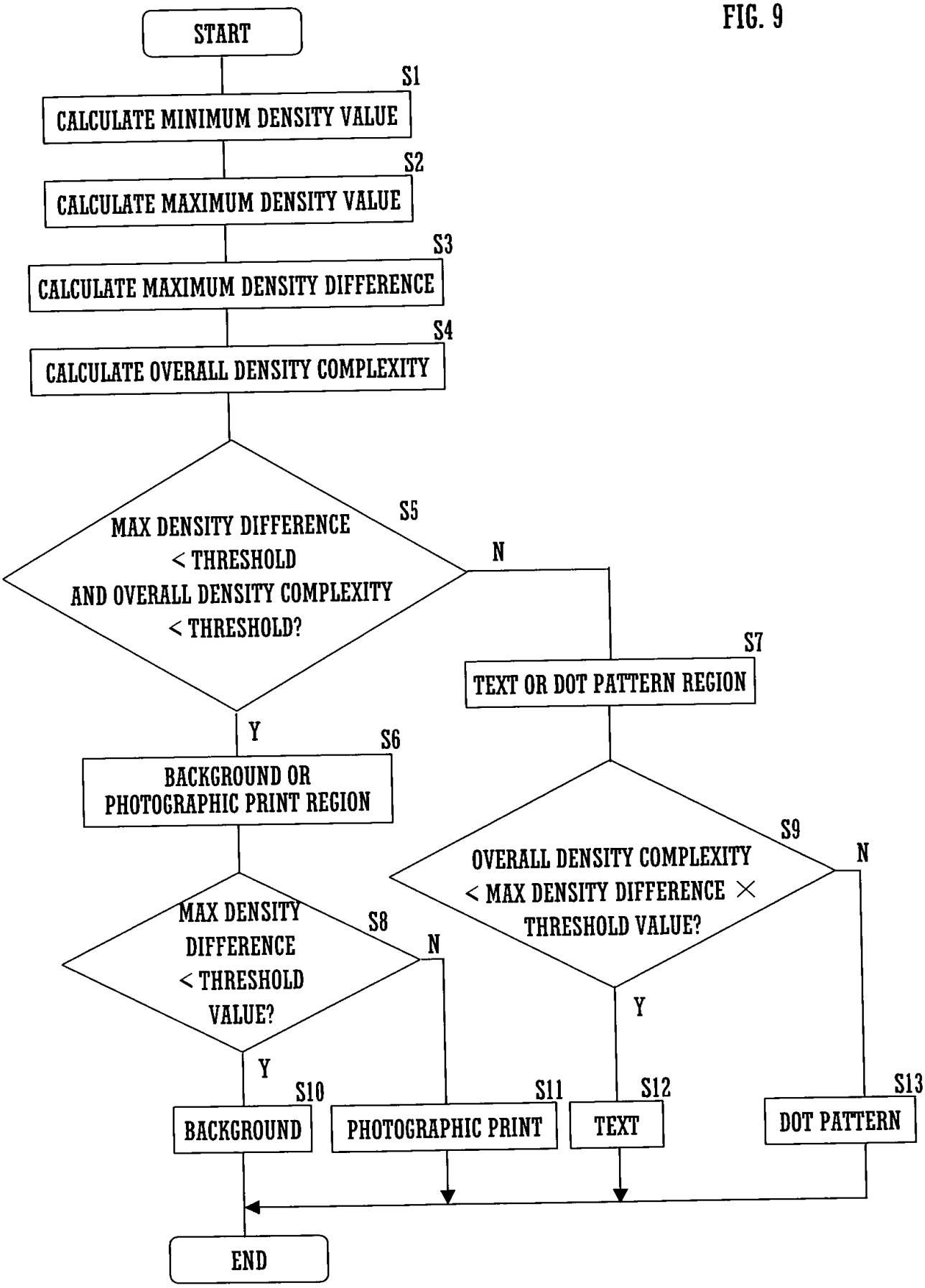

JUDGMENT BLOCKS IN SUB-SCANNING DIRECTION
AIMED PIXEL
N PIXELS
JUDGMENT BLOCKS IN
MAIN SCANNING DIRECTION
M PIXELS

FIG. 8

FIG. 9


START
S1
CALCULATE MINIMUM DENSITY VALUE
S2
CALCULATE MAXIMUM DENSITY VALUE
S3
CALCULATE MAXIMUM DENSITY DIFFERENCE
S4
CALCULATE OVERALL DENSITY COMPLEXITY
S5
MAX DENSITY DIFFERENCE < THRESHOLD AND OVERALL DENSITY COMPLEXITY < THRESHOLD?
N
Y
S6
BACKGROUND OR PHOTOGRAPHIC PRINT REGION
S7
TEXT OR DOT PATTERN REGION
S8
MAX DENSITY DIFFERENCE < THRESHOLD VALUE?
N
Y
S9
OVERALL DENSITY COMPLEXITY < MAX DENSITY DIFFERENCE × THRESHOLD VALUE?
N
Y
S10
BACKGROUND
S11
PHOTOGRAPHIC PRINT
S12
TEXT
S13
DOT PATTERN
END

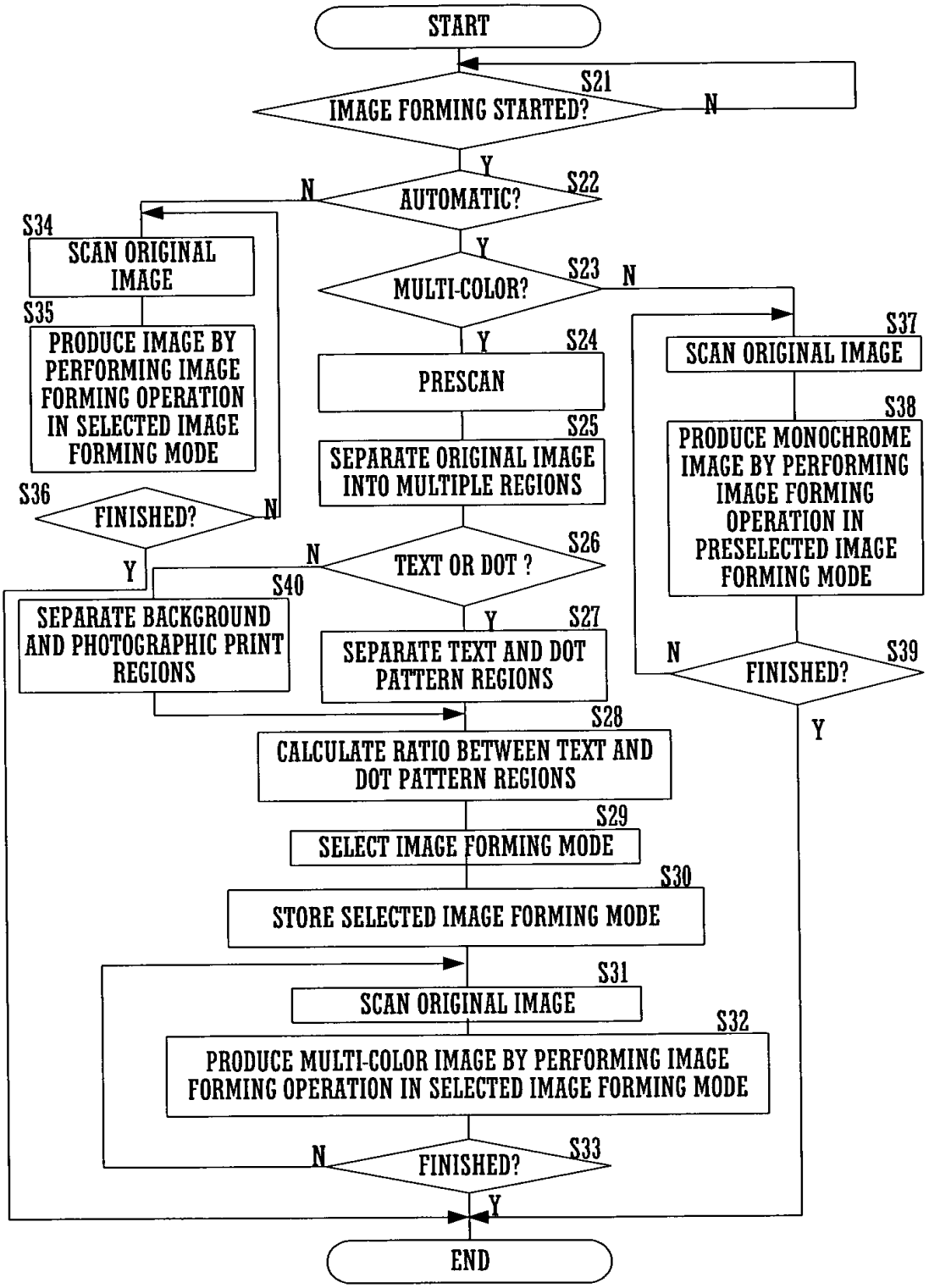

START
S21
IMAGE FORMING STARTED?
N
Y
S22
AUTOMATIC?
N
Y
S23
MULTI-COLOR?
N
Y
S24
PRESCAN
S25
SEPARATE ORIGINAL IMAGE INTO MULTIPLE REGIONS
S26
TEXT OR DOT ?
N
Y
S27
SEPARATE TEXT AND DOT PATTERN REGIONS
S28
CALCULATE RATIO BETWEEN TEXT AND DOT PATTERN REGIONS
S29
SELECT IMAGE FORMING MODE
S30
STORE SELECTED IMAGE FORMING MODE
S31
SCAN ORIGINAL IMAGE
S32
PRODUCE MULTI-COLOR IMAGE BY PERFORMING IMAGE FORMING OPERATION IN SELECTED IMAGE FORMING MODE
S33
FINISHED?
N
Y
S34
SCAN ORIGINAL IMAGE
S35
PRODUCE IMAGE BY PERFORMING IMAGE FORMING OPERATION IN SELECTED IMAGE FORMING MODE
S36
FINISHED?
N
Y
S40
SEPARATE BACKGROUND AND PHOTOGRAPHIC PRINT REGIONS
S37
SCAN ORIGINAL IMAGE
S38
PRODUCE MONOCHROME IMAGE BY PERFORMING IMAGE FORMING OPERATION IN PRESELECTED IMAGE FORMING MODE
S39
FINISHED?
N
Y
END

FIG. 10